

**Before**

**UTTARAKHAND ELECTRICITY REGULATORY COMMISSION**

**Petition No. 15 of 2016**  
**Petition No. 19 of 2016**  
**Petition No. 22 of 2016**  
**Petition No. 23 of 2016**  
**Petition No. 38 of 2016**

**In the Matter of:**

Approval of 09 nos. projects under Capital Investments under Para 11 of the Transmission Licence involving various works of System Improvement.

And

**In the Matter of:**

Power Transmission Corporation of Uttarakhand Limited (PTCUL)

**Coram**

**Shri Subhash Kumar      Chairman**

**Date of Order: 1<sup>st</sup> March, 2017**

**ORDER**

This Order relates to the Applications filed by Power Transmission Corporation of Uttarakhand Ltd. (hereinafter referred to as "PTCUL" or "the Petitioner") vide letter Nos. 370 dated 16.03.2016, 559 to 601 dated 28.04.2016, 1295 dated 20.07.2016 & letter Nos. 1220 to 1223 dated 10.08.2016, seeking approval of the Commission for the proposed investments involving various works of System Improvement under Para 11 of Transmission Licence [Licence No. 1 of 2003]

2. The estimated cost of the works proposed by the Petitioner is as follows:

**Table 1: Project wise cost proposed by the Petitioner**

No.	Particulars	Substation/Transformer Capacity	Length of lines (Km.)	Project Cost including IDC as per DPR (₹ Crore)
(a)	Construction of 132 kV GIS S/s Araghar and LILO of 132 kV Majra-Laltappar at 132 kV S/s Araghar line through laying of 132 kV cable	2x40 MVA	3.20	122.17
(b)	Construction of 132 kV S/c Over head line on Double Circuit Tower from 220 kV S/s SIDCUL Haridwar to 132 kV S/s Jwalapur, Haridwar	-	4.00	13.79
(c)	Procurement, Erection & Commissioning of 01 No. 40 MVA 132/33 kV Transformer complete with 132 kV & 33 kV Bay for increasing Capacity of 132 kV S/s Laksar.	40 MVA 132 /33 kV with 132 kV & 33 kV Bay	-	8.19
(d)	Balance work of "Diversion of 220 kV Rishikesh-Dharasu and Chamba-Dharasu line" in THDC submerged area	-	14.05	5.19
(e)	Procurement, erection and commissioning of 02 no. 220/33 kV 50 MVA Transformer and Augmentation of 220 kV (02 Nos. Bays) & 33 kV (09 Bays) at 220 kV S/s Roorkee by increasing the capacity of 220 kV S/s Roorkee.	100 MVA(2x50 MVA)	-	11.66
(f)	Augmentation of 132/33 kV Transformer capacity at 132 kV S/s Pithoragarh.	2X20 MVA + 2X3X5 MVA to 1X20 MVA + 1X40 MVA + 2X3X5 MVA	-	4.27
(g)	Stringing of Second Circuit of 132 kV D/C Satpuli-Kotdwar Transmission Line.		47.00	13.48
(h)	Augmentation of 220 kV S/s Haldwani including construction of associated 01 No. 132 kV Bay and 01 No. 33 kV Bay and Extension & Bisection of 132 kV & 33 kV Bus.	2x40 MVA to 3x40 MVA	-	6.94
(i)	Augmentation of 220 kV S/s Jaspur including construction of associated 01 no. 132 kV bay and 01 no. 33 kV bay and bisection of 132 kV &33 kV main bus.	2x40 MVA to 3x40 MVA	-	7.49
	<b>Total</b>			<b>193.18</b>

3. The Petitioner has submitted copy of extracts of BoD Meetings of PTCUL, wherein the Petitioner's Board has approved the Corporation's aforesaid proposals with a funding plan of 70% through loan assistance by financial institutions and balance

30% as equity funding from GoU. However, for augmentation work of 220 kV S/s Roorkee, funding plan of 90% loan assistance by REC and the balance 10% as equity funding from GoU has been approved.

4. As all the stated proposals involve system improvement works, the Commission decided to club the same and accordingly, a single Order is being passed.
5. To justify the need of the works proposed, the Petitioner submitted that:

**(a) Construction of 132 kV GIS S/s Araghar and LILO of 132 kV Majra-Laltappar at 132 kV S/s Araghar line through laying of 132 kV cable.**

The Petitioner submitted that the proposed construction of the S/s is to meet out the future load demand of Araghar and nearby area.

The Petitioner has submitted that three 33 kV Sub-Stations namely, Patel Road 16 MVA, Araghar 26 MVA and Nehru Colony 10MVA are to be connected to the proposed 2x40 MVA 132/33 kV Substation Araghar. The Petitioner has further contended that due to land constraints at the proposed site i.e. campus of 33/11 S/s Araghar of UPCL, the proposed S/s shall be of GIS type and shall be fed by LILO of 132 kV Majra- Laltappar line through laying of 132 kV cable, which is the only option available due to densely populated area in the proposed route. Therefore, taking into consideration the Safety and Reliability of Transmission System, the Petitioner has contended that it has proposed laying double circuit of 132 kV copper cable upto the proposed S/s. PTCUL has further informed that with the construction of the said S/s approximately 40 MVA load shall shift from the already overloaded 132 kV Majra S/s.

With regard the possibility of construction of Hybrid Sub-station instead of GIS sub-station, to save on cost, the Petitioner informed that due to insufficient area of land at the site, it is not possible to accommodate Hybrid Sub-station alongwith Control Room Building, Store Room and Operating Staff Colony. It was further informed by the Petitioner that by constructing GIS Sub-station future expansion of Switchyard shall be possible which will not be feasible in case Hybrid Sub-Station is envisaged.

(b) **Revised DPR for construction of 132 kV S/c Over head line on Double Circuit Tower from 220 kV S/s SIDCUL Haridwar to 132 kV S/s Jwalapur, Haridwar.**

According to the Petitioner, the approval for the work was granted by the Commission vide its Order dated 23.07.2015. The work involved construction of single circuit line on single circuit towers along with 132 kV Bays at both the ends. The cost approved by the Commission for the said work was ₹ 4.77 Crore. PTCUL has stated that in line with the CEA guidelines and to avoid future RoW problems in construction of additional line, the single circuit towers proposed earlier have been modified and now it is proposed to construct the said line on double circuit towers. The Petitioner has further submitted that the said 132 kV Jwalapur-SIDCUL line is passing through seasonal river bed and in order to protect the 132 kV towers from any damage during the raining season, Special River Bed Foundations are proposed for about 11 towers and 03 sets of Gantries out of 19 towers and 03 sets Gantries due to which original estimated foundation volume has increased from 400 CuM to 2604.74 CuM and accordingly a revised estimate for the said line has been submitted.

(c) **Procurement, Erection & Commissioning of 01 No. 40 MVA 132/33 kV Transformer complete with 132 kV & 33 kV Bay for increasing Capacity of 132 kV S/s Laksar.**

The Petitioner has submitted that 132 kV S/s Laksar is feeding rural and town areas and industries in and around Laksar area. According to the Petitioner, both the installed 40 MVA transformers are overloaded and load shedding is done at the local level to avoid damage to the transformers. Moreover, PTCUL has further stated that UPCL is also contemplating to increase the capacities of its 33/11 kV Sub-stations at Khanpur, Mundlana and Raisi so it is imperative that installed capacity of 132 kV Laksar is increased from 2X 40 MVA to 3X40 MVA.

(d) **Balance work of "Diversion of 220 kV Rishikesh-Dharasu and Chamba-Dharasu line" in THDC submerged area."**

The Petitioner submitted that THDC requested PTCUL to relocate 220 kV towers of Rishikesh-Dharasu (I) and Chamba-Dharasu Transmission lines which were coming under submergence area of Tehri Dam. Survey work was carried out by the Petitioner and it was found that 15 nos. towers which were coming under submergence are required to be shifted. According to PTCUL out of the estimated amount of ₹ 7.79 Crore, THDC deposited only ₹1.5 Crore and refused to deposit the balance amount. The Petitioner contended that considering the said work to be a deposit work and keeping in view the importance of the lines evacuating power from MB-I and MB-II, it awarded the diversion works to M/s HPCL without seeking prior approval of the Commission. As M/s HPCL could not complete the work the contract agreement with the firm was terminated after forfeiting its Bank guarantee. According to the Petitioner investment approval for balance works amounting to ₹ 5.19 Crore has been filed before the Commission.

(e) **Investment approval for Augmentation of 220 kV S/s Roorkee by adding of 220/33 kV, 2 X 50 MVA Transformers.**

The Petitioner submitted this proposal before the Commission, for approval almost six years back, vide PTCUL letter No. 1422 dated 19.10.2010. The Commission vide its letter No. 1604 dated 06.12.2010 directed the Petitioner to file the Petition as per the provisions of CBR. The Petitioner meanwhile, filed a Petition for approval of Business Plan and MYT for FY 2013-14 to 2015-16. The Petitioner contended that the said Business Plan, in which the said project was included, was approved by the Commission and assuming that the approval of Business Plan as the investment approval for the project by the Commission it did not file a separate Petition for investment approval of the project. The project was completed and commissioned by PTCUL in January 2014. The Petitioner has requested the Commission to condone the delay in filing the Petition and grant post facto approval for the said work.

According to the Petitioner there are already 03 132/33 kV 40 MVA transformers installed at 220 kV S/s Roorkee. Installation of additional 40MVA transformer was not feasible as it would increase the fault level at 132 kV bus, therefore the only solution to meet the growing load of Roorkee area was to install 02 no. 220/33 kV 50 MVA transformers at the S/s.

**(f) Augmentation of 132/33 kV Transformer capacity at 132 kV S/s Pithoragarh from 2X20 MVA + 2X3X5 MVA to 1X20 MVA + 1X40 MVA + 2X3X5 MVA**

The Petitioner submitted that 132/33 kV S/s Pithoragarh is one of the important S/s in hilly area of Kumaon Zone and was commissioned in 2003. This S/s meets the load requirement of domestic, commercial, industrial and agricultural consumers of Pithoragarh and Champawat District. At present there are 02 no. 15 MVA and 02 no. 20 MVA 132/33 kV transformers installed at the S/s. Presently the loading of the S/s is approximately 90% of total capacity of these transformers. The Petitioner has submitted loading on each transformer for the last three years justifying the same. Keeping in view the exponential load growth and also to meet the T-1 contingency, the Petitioner contends that replacement of 01 no. old 20 MVA T/F by 40 MVA transformer is imperative at 132 kV Pithoragarh S/s.

**(g) Augmentation of 132/33 kV S/s Jaspur from 2 X 40 MVA to 3 X 40 MVA including construction of associated 01 No. 132 kV bay and 01 No. 33 kV Bay and bisection of 132 kV & 33 kV main Bus.**

According to the Petitioner this sub-station was constructed in year 2006-07 and caters to the load of domestic, industrial and agricultural consumers of Jaspur, Patramupr, Pakkakot etc. The maximum loading reached on each transformer in the last 04 years as stated by the Petitioner is as given below:

S. No.	Month/Year	Max. loading on TF-1 (Amps)	Max. loading on TF-2 (Amps)
1.	May-2013	167	167
2.	July-2014	162	164
3.	June-2015	151	143
4.	August-2016	152	140

According to the Petitioner, since both the installed 2x40 MVA transformers are overloaded, augmentation of the S/s has been proposed to improve availability, reliability of power to the consumers.

**(h) Stringing of Second Circuit of 132 kV D/C Satpuli-Kotdwar Transmission Line.**

The Petitioner submitted that stringing of second circuit of 132 kV Satpuli-Kotdwar line has been proposed to meet out the future load demand of Kotdwar and nearby areas. The Petitioner contended that under low hydro condition i.e. during outage of 132 kV Kotdwar-Chilla line, 132 kV S/C Satpuli-Kotdwar line gets overloaded resulting in disruption of supply at 132 kV Kotdwar S/s. With the stringing of the said second circuit of 132 kV Satpuli-Kotdwar transmission line reliable supply to 132 kV S/s Kotdwar can be ensured.

**(i) Augmentation of 132/33 kV Transformer capacity at 220 kV S/s Haldwani from 2 X 40 MVA to 3 X 40 MVA including construction of associated 01 No. 132 kV Bay and 01 No. 33 kV Bay and Extension & Bisection of 132 kV & 33 kV Bus.**

With regard to above proposed works, the Petitioner submitted that the S/s is overloaded upto 80% of total capacity of the transformers. Further, 02 nos. new 33/11 kV S/s are also proposed to be connected to this S/s therefore, augmentation of 220 kV S/s Haldwani from 2 X 40 MVA to 3 X 40 MVA is required to meet the ever growing demand in and around Haldwani area.

**Commission's observations, Views and Decision**

6. On examination of the proposals submitted by the Petitioner, certain deficiencies/shortcomings were observed, which were communicated to the Petitioner vide Commission's letter's No. 1244 dated 09.11.2016. Reply to these deficiencies/shortcomings was submitted by the Petitioner vide its letter No.2362 dated 05.12.2016.
7. With regard to 220 kV S/s Roorkee the Petitioner vide its letter dated 14.02.2017 submitted revised scheme report mentioning total executed cost of ₹11.66 Crore

alongwith loan and equity portion. On the plea of the Petitioner the Commission is granting post-facto approval for augmentation of 220 kV S/s Roorkee in the instant case. However, Commission would like to make it clear that in future it would not accord approval to any of the works completed by the Petitioner whose prior approval has not been taken from the Commission.

8. In the light of submission of revised DPR for construction of 132 kV Over head line on Double Circuit Tower from 220 kV S/s SIDCUL Haridwar to 132 kV S/s Jwalapur, the Commission would direct the Petitioner that in future before filing any DPR it must ensure that estimate for the work are framed only after taking all the site conditions into consideration, for in future, the Commission may deny the Petitioner the approval of the revised DPR for which investment approval has already been accorded by it. The cost of the project approved earlier by the Commission by its Order dated 23.07.2015 shall now stand revised to ₹9.67 Crore.
9. In support of these clarifications given by the Petitioner the proposed augmentation works are acceptable. However, on examination of the proposals, it has also been observed that while preparing the estimate in the DPRs, the Petitioner in addition to contingency and cost of establishment, audit & accounting has added quantity variation and cost escalation in some of the estimate. In the absence of any justified reasons for including quantity variation and cost variation, the Commission is not considering the same as of now.
10. Based on the above, against the Petitioner's proposed capital expenditure of ₹193.18 Crore, the Commission hereby grants in-principle approval for the expenditure of ₹145.68 Crore only as per Table 2 given below with the direction that the Petitioner should go ahead with the aforesaid works subject to fulfillment of the terms & conditions mentioned in Para 10 below.

**Table 2: Project wise cost proposed by the Petitioner vis-a-vis cost considered by the Commission**

Sl. No.	Particulars	Substation/Transformer Capacity	Length of lines (Km.)	Project Cost including IDC as per DPR (₹Crore)	Cost considered by the Commission (₹Crore)
(a)	Construction of 132 kV GIS S/s Araghar and LILO of 132 kV Majra-Laltappar at 132 kV S/s Araghar line through laying of 132 kV cable.	2x40 MVA	3.20	122.17	87.43
(b)	Construction of 132 kV S/c Over head line on Double Circuit Tower from 220 kV S/s SIDCUL Haridwar to 132 kV S/s Jwalapur, Haridwar.	-	4.00	13.79	9.67
(c)	Procurement, Erection & Commissioning of 01 No. 40 MVA 132/33 kV Transformer complete with 132 kV & 33 kV Bay for increasing Capacity of 132 kV S/s Laksar.	40 MVA 132 /33 kV with 132 kV & 33 kV Bay	-	8.19	5.73
(d)	Balance work of "Diversion of 220 kV Rishikesh-Dharasu and Chamba-Dharasu line" in THDC submerged area.	-	14.05	5.19	3.81
(e)	Procurement, erection and commissioning of 02 no. 220/33 kV 50 MVA Transformer and Augmentation of 220 kV (02 Nos. Bays) & 33 kV (09 Bays) at 220 kV S/s Roorkee by increasing the capacity of 220 kV S/s Roorkee.	100 MVA(2x50 MVA)	-	11.66	11.66
(f)	Augmentation of 132/33 kV Transformer capacity at 132 kV S/s Pithoragarh.	2X20 MVA + 2X3X5 MVA to 1X20 MVA + 1X40 MVA+ 2X3X5 MVA	-	4.27	4.27
(g)	Stringing of Second Circuit of 132 kV D/C Satpuli-Kotdwar Transmission Line.		47.00	13.48	9.97
(h)	Augmentation of 220 kV S/s Haldwani including construction of associated 01 No. 132 kV Bay and 01 No. 33 kV Bay and Extension & Bisection of 132 kV & 33 kV Bus.	2x40 MVA to 3x40 MVA	-	6.94	6.32
(i)	Augmentation of 220 kV S/s Jaspur including construction of associated 01 no. 132 kV bay and 01 no. 33 kV bay and bisection of 132 kV &33 kV main bus.	2x40 MVA to 3x40 MVA	-	7.49	6.82
	<b>Total</b>			<b>193.18</b>	<b>145.68</b>

11. Terms and conditions subject to which in-principle approval granted by the Commission are as follows:

- (i) The Petitioner should go for the competitive bidding for obtaining most economical prices from the bidders.
- (ii) All the loan conditions as may be laid down by the funding agency in their detailed sanction letter are strictly complied with. However, the Petitioner is directed to explore the possibility of swapping this loan with cheaper debt option available in the market.
- (iii) The Petitioner shall, within one month of the Order, submit letter from the State Government or any such documentary evidence in support of its claim for equity funding agreed by the State Government or any other source in respect of the proposed schemes.
- (iv) After completion of the aforesaid schemes, the Petitioner shall submit the completed cost and financing of the schemes.
- (v) The cost of servicing the project cost shall be allowed in the Annual Revenue Requirement of the petitioner after the assets are capitalized and subject to prudence check of cost incurred.

Ordered accordingly.

**(Subhash Kumar)**  
**Chairman**